

REMARKS

Claims 5-9, 12-18, 24, and 28 are all the claims pending in the application.

I. Examiner Interview Summary

In a telephonic interview with the Examiner on May 21, 2007, the Applicant's representative and the Examiner discussed the meaning of the words "transmit" and "informing" relative to Claim 5, but were not able to come to an agreement on the meaning of the terms.

Additionally, the Applicant's representative and the Examiner discussed the substance of the §102 rejection with regard to the Claim 5 element of "origin site routers" and "intermediate routers" within the "Internet," in the claim element that recites "informing said origin site router and other intermediate routers within the Internet, or other WAN, or said bandwidth congestion and of an attacking address corresponding to said attacking site...." However, the Examiner and the Applicant's representative were not able to reach an agreement on the meaning of the claim terms with regard to the cited prior art, US Patent No. 6,735,702, to Yavatkar.

At the conclusion of the interview, the Examiner invited the Applicant's representative to further explain the arguments discussed over the phone in a written response. Therefore, the Applicant herein submits the following response in the hope that the meaning of various terms in the present application can be clarified and distinguished from the prior art.

II. Claim Objections

The Examiner first objected to Claim 5 because of a lack of antecedent basis in line 6 for the term "of sites." The Examiner also objected to the use of the term "destination routers" in Claim 5, line 7, without the modifier of "site" between the terms. The Applicant has reviewed

Claim 5 and herein submits an amended Claim 5 to correct the claim terms along the lines of the suggestions by the Examiner.

III. Claim Rejections: 35 USC §102

The Examiner rejected Claims 5-8, 13, 15-18, and 28 under 35 USC §102(e) as being anticipated by Yavatkar et al (U.S. Patent No. 6,735,702). The Examiner also noted in the Response to Arguments section, paragraph 3, that “in response to applicant’s argument that the reference fails to show a step of transmitting the address to a router, it is noted that the feature is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.” (citation omitted). The Examiner then notes that the same argument applies to Claims 5, 9, 12, 14-18, and 24, which the Applicant claims all teach the same feature. During the interview between the Applicant’s representative and the Examiner, the Examiner stated that the meaning of the terms “transmit,” which the Applicant uses in a previous response, and “inform,” which is used in the claims of the present invention, are not the same.

The Applicant respectfully disagrees with the Examiner’s position, and submits that the terms “transmit” and “inform” have the same meaning. Specifically, the Applicant believes that to “inform” someone or something is also “transmitting” the information, and that the router of the present invention cannot be “informed” of the attacking address without the information being “transmitted” by the method of the present invention. According to the Merriam-Webster Online Dictionary (hereafter “Webster’s”), attached herein as Appendix A, “inform” means “to *communicate* knowledge to.” Webster’s also defines the word “communicate” as “to cause (something) to pass *from one to another*.” Finally, Webster’s defines the word “transmit” as “to

send or convey *from one* person or place *to another*.” (emphasis added in all definitions). As emphasized, the words “inform,” “communicate,” and “transmit” all involve the communication of something from one to another. Therefore, the Applicant believes that the act of “*informing* said origin site router...of an attacking address” is identical to the idea of *transmitting* the attacking address to the origin site router, and submits again that Yavatkar fails to show a step of transmitting the attacking address to a router.

Furthermore, the Applicant submits that regardless of whether the term “transmit” or “inform” is used in the recited claims, the Yavatkar reference fails to teach the limitation of informing an origin site router within the Internet of an attacking address corresponding to an attacking site, as stated in Claims 5, 12, 13, and 15-18. The Applicant points out that Yavatkar is directed to diagnosing a network intrusion on a local network, such as within a web server, but does not discuss communicating information or taking any action outside of the local network, such as on the Internet. However, one aspect of the invention of the present application is directed to informing routers *outside* the local network or web server of an attack, in order to more efficiently block traffic from the attacking site. The Applicant provides the following detailed explanation to further point out the differences between Yavatkar and the present invention.

Invention of Yavatkar

The invention of Yavatkar, as stated in the Summary of the Invention, is directed to a method for “gathering information about the traffic on the network by launching an agent and having the agent iteratively identify which of the links on the node on which the agent operates accepts a type or class of traffic, traverse the identified link to the node across the link, and repeat the process.” Col. 2, lines 56-61. Yavatkar further defines the agents as “mobile software

modules—to collect data on the state of a network during a network attack,” and further as “a software module having the capability to move from node to node on a network and to execute on the nodes to which it moves.” Col. 3, lines 26-28 and lines 38-40. Yavatkar also describes how “modern computer networks are vulnerable to various types of attacks *from within and without the network*.” Col. 1, lines 39-40 (emphasis added). Therefore, the “network” of Yavatkar should be characterized as a local computer network, such as a web server, while the Internet is what Yavatkar is characterizing as “without the network,” or outside the network, in Col. 1, lines 39-40. Additionally, only a local network could be vulnerable to a “network attack,” as Yavatkar is directed to preventing, as the attack must be directed at a specific network address corresponding to the server or a device. Furthermore, only a local network would have software “agents” with the capability and permission to access the various nodes within that local network to diagnose and stop a network attack. If Yavatkar were referring to the “network” as the Internet, its agents would not have the permissions to traverse through any node in the Internet to diagnose and alter node configurations to prevent an attack. Therefore, the “network” of Yavatkar is a local network, and the actions taken by the software agents of Yavatkar are limited to that local network.

Invention of the Present Application

In contrast to Yavatkar, one aspect of the present invention is directed to a method of preventing bandwidth congestion which includes the method step of “informing said origin site router and other intermediate routers *within the Internet*, or other WAN, of said bandwidth congestion and of an attacking address corresponding to said attacking site from which said bandwidth congestion originated...” (Claim 5, element 5; emphasis added). The “Internet,” when referred to as a proper noun, as in Claim 5 and throughout the specification, is defined by

the Merriam-Webster Online Dictionary as “an electronic communications network that connects computer networks and organizational computer facilities around the world.” See Appendix A. Therefore, the present invention is directed to sending information on the site of a network attack from the local computer network, such as a web server, to a router outside of that network to the Internet, where other nodes, or routers, on other computer networks and web servers can identify and independently decide to act against the attacking site. To this end, the present application states that “the present invention provides a method and apparatus for preventing attackers in a DOS attack from attacking *other servers on the Internet* once a DOS attack has been detected.” Page 8, lines 10-12 (emphasis added). By informing the origin site router and other intermediate routers within the Internet of the attacking site, the other routers are able to block traffic and prevent the dissemination of the attack to the network of the present invention and other local computer networks on the Internet.

Additionally, the paragraph on page 11, line 12, of the specification details how an “ISP Router (50) of the attacking client (60) receives the request and routes (150) the request to the appropriate site router (30) corresponding to the target server (10).” The present application then states, on page 11, line 22 – page 12, line 1, how “the attacking client’s IP address, determined from the request packet, is automatically communicated upstream (130) to the ISP router (50)...” The ISP Router, or Internet Service Provider Router, is a router operated on a different computer network, and identified by the proximity to the attacking site. “ISP Router (50), using an access list or some other such mechanism is, thus, able to prevent any further bogus requests from being placed onto the Internet from the attacker.” Page 12, lines 1-3. It is therefore one purpose of the invention to inform intermediate routers within the Internet, such as the ISP router, of the attacking site’s address, so that the ISP router, which is closer to the attacking site, can more

effectively prevent the attacking site from propagating its attack. The ISP router is independent of the network of the present invention, and can therefore only be informed of the attacking site, not ordered to take any specific action. It is therefore up to the ISP router to initiate its own prevention mechanism against the attacking site. The specification states "...the IP address of the attacking client (60) can also be communicated to the router that is physically closest to the attacker. This permits blocking of the attacking client at the point closest to the attacker's entry to the Internet." Page 12, lines 9-12.

In conclusion, one aspect of the invention of the present application is therefore directed to informing routers within the Internet, which are outside of the network, of the address of an attacking site.

Distinctions Between Yavatkar and the Present Invention

Based on the aforementioned explanations of the invention of Yavatkar and the invention of the present application, the Applicant believes that Yavatkar does not disclose the aspects of the present invention cited in the pending claims. Specifically with regard to Claim 5, Yavatkar fails to disclose the method step of informing said origin site router and other intermediate routers within the Internet, or other WAN, of said bandwidth congestion and of an attacking address corresponding to said attacking site. Yavatkar is only directed to diagnosing and preventing an attack from within its own network, while the present invention, in one aspect, is directed to stopping the attack on the Internet, outside of its own network. The Applicant therefore believes that Claim 5 is allowable over the prior art.

As the limitation of Claim 5, which the Applicant believes is allowable over the prior art, is further stated in independent Claims 12 and 15-18, the Applicant believes that all rejected independent claims are allowable over the prior art. Furthermore, as all the remaining dependent

claims are dependent upon one of the allowable independent claims, the Applicant believes that all pending claims are therefore allowable. The Applicant therefore requests a timely allowance of all of the pending claims.

IV. Claim Rejections: 35 USC §103

The Examiner also rejected Claim 9, 14, and 24 under 35 USC §103(a) as being unpatentable over Yavatkar and in view of Cox et al (US Patent No. 6,738,814. The Applicant refers the Examiner to the arguments presented above in Section III with regard to the allowability of Claim 5 and Claim 12. As Claim 9 and 24 depend from Claim 5, and as Claim 14 depends from Claim 12, the Applicant also believes that Claims 9, 14, and 24 are allowable as well, and respectfully requests the rejection of these claims be withdrawn.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

Application No.: 09/774,102
Office Action dated Jan. 25, 2007
Response dated May 25, 2007

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Respectfully submitted,

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inform

One entry found for **inform**.

Main Entry: **in·form**

Pronunciation: in-'form

Function: *verb*

Etymology: Middle English, from Anglo-French *enformer*, from Latin *informare*, from *in-* + *forma* form
transitive verb

1 *obsolete* : to give material form to

2 **a** : to give character or essence to <the principles which *inform* modern teaching> **b** : to be the characteristic quality of : **ANIMATE** <the compassion that *informs* her work>

3 *obsolete* : **GUIDE, DIRECT**

4 *obsolete* : to make known

5 : to communicate knowledge to <*inform* a prisoner of his rights>
intransitive verb

1 : to impart **information** or knowledge

2 : to give **information** (as of another's wrongdoing) to an authority <*informed* on a member of his own gang>

synonyms **INFORM, ACQUAINT, APPRISE, NOTIFY** mean to make one aware of something. **INFORM** implies the imparting of knowledge especially of facts or occurrences <*informed* us of the crisis>. **ACQUAINT** lays stress on introducing to or familiarizing with <*acquaint* yourself with the keyboard>. **APPRISE** implies communicating something of special interest or importance <keep us *apprised* of the situation>. **NOTIFY** implies sending notice of something requiring attention or demanding action <*notified* the witness when to appear>.

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communicate

One entry found for **communicate**.

Main Entry: **com·mu·ni·cate**

Pronunciation: k&-'myü-n&-'kAt

Function: *verb*

Inflected Form(s): **-cat·ed; -cat·ing**

Etymology: Latin *communicatus*, past participle of *communicare* to impart, participate, from *communis* common -- more at **MEAN**
transitive verb

1 *archaic* : **SHARE**

2 a : to convey knowledge of or information about : make known
<communicate a story> **b** : to reveal by clear signs <his fear
communicated itself to his friends>

3 : to cause to pass from one to another <some diseases are easily
communicated>
intransitive verb

1 : to receive Communion

2 : to transmit information, thought, or feeling so that it is
satisfactorily received or understood <two sides failing to
communicate with each other>

3 : to open into each other : **CONNECT** <the rooms *communicate*>

- **com·mu·ni·ca·tee** /-'myü-ni-k&-'tE/ *noun*

- **com·mu·ni·ca·tor** /-'myü-n&-'kA-t&r/ *noun*

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transmit

One entry found for **transmit**.

Main Entry: **trans·mit**

Pronunciation: tran(t)s-'mit, tranz-

Function: *verb*

Inflected Form(s): **trans·mit·ted; trans·mit·ting**

Etymology: Middle English *transmitten*, from Latin *transmittere*, from *trans-* + *mittere* to send

transitive verb

1 a : to send or convey from one person or place to another :

FORWARD b : to cause or allow to spread: as (1) : to convey by or as if by inheritance or heredity : **HAND DOWN** (2) : to convey (infection) abroad or to another

2 a (1) : to cause (as light or force) to pass or be conveyed through space or a medium (2) : to admit the passage of : **CONDUCT** <glass *transmits* light> **b** : to send out (a signal) either by radio waves or over a wire

intransitive verb : to send out a signal either by radio waves or over a wire

- **trans·mit·ta·ble** /-'mi-t&-b&l/ *adjective*

- **trans·mit·tal** /-'mi-t&l/ *noun*

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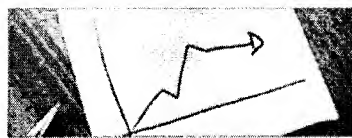
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Internet

One entry found for **Internet**.

Main Entry: **In·ter·net** 

Pronunciation: 'in-t&r-"net

Function: *noun*

: an electronic communications network that connects computer networks and organizational computer facilities around the world

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